

## Hearing loss in children with Down's syndrome

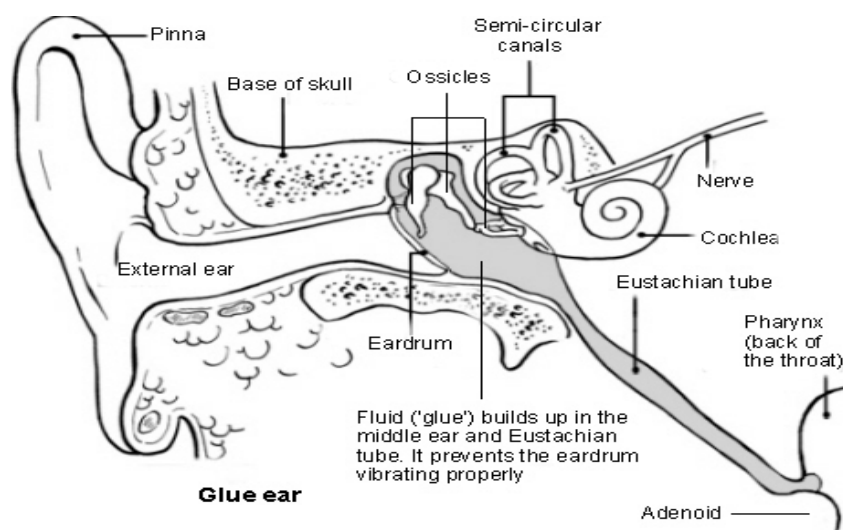
You have been given this leaflet because a hearing test has shown your child has a hearing loss. Many children with Down's syndrome also have some degree of hearing loss. Hearing loss that is not diagnosed or managed can have a negative effect on a child's social and language development, especially if a child has a learning disability. This leaflet will tell you about different types of hearing loss and what help is available.

### Introduction

Many children with Down's syndrome have a hearing loss. This is most commonly due to glue ear but some children have a sensorineural (permanent) hearing problem. All children with Down's syndrome should have their hearing tested regularly.

### What is glue ear?

When a sound enters the ear, the eardrum moves back and forth to send the sound further up the hearing pathway. The space behind the eardrum is filled with air to allow the eardrum to move freely. Sometimes, fluid collects in this space. This happens when the tube which connects the middle part of the ear to the back of the throat (Eustachian tube), which keeps this space filled with air, does not work very well. The fluid makes it more difficult for the eardrum to move, which may muffle some sounds. The medical term for glue ear is otitis media with effusion.



### What are the symptoms of glue ear?

When a child has glue ear their hearing may change from day to day or be poor all of the time. In some cases children will only have a mild hearing difficulty and some children will hear at near normal levels. However some children will clearly be struggling to hear and it might feel similar to what you experience when you put your fingers in your ears. The fluid itself is not harmful however it can sometimes cause an ear infection. In such cases, treatment with antibiotics may be advised.

Many children with glue ear will grow out of it by the age of seven or eight as their Eustachian tubes grow larger. However, children with Down's syndrome often have glue ear before the age of one and it may last until the age of 10 or even into adulthood as their Eustachian tubes stay small throughout their lives.

### What is sensorineural hearing loss?

A sensorineural hearing loss is a permanent hearing problem which usually affects the inner organ of hearing known as the cochlea. It can occasionally affect the hearing nerve. Some children with Down's syndrome are born with this type of deafness and some develop it as they get older. The incidence of sensorineural hearing loss increases with age and prevalence is around 20% as adult life begins. Therefore people with Down's syndrome are more likely to develop a cochlea hearing loss earlier in life than average.

### Management options for glue ear

The following options may be discussed with you:

#### 'Watchful waiting'

Sometimes a period of 'watchful waiting' is advised for glue ear however in children with Down's syndrome the condition seems to be much more persistent and the glue formed tends to be thicker. The Eustachian tube which connects the middle ear to the back of the throat may be particularly narrow in children with Down's syndrome making it even more difficult for the congestion to clear.

#### Grommets

The operation to insert grommets can sometimes be difficult or impossible in children with Down's syndrome as the ear canal may be too narrow for the surgeon to operate. The incidence of complications, following grommet insertion, is greater in children with Down's syndrome. The underlying Eustachian tube function is usually poor and is probably responsible for aggravating the long-term damage grommets may cause to the eardrum. Grommets may leave a hole in the drum which then chronically discharges. Although grommets are an alternative, the first line treatment, for hearing impaired children with Down's syndrome, should be a trial of hearing aids.

## Management options for glue ear and sensorineural hearing loss

### Hearing aids

Hearing aids amplify sounds in order to make speech audible. They consist of an ear mould which fits inside the outer part of the ear and the hearing aid itself which sits over the back of the ear. We have several different hearing aids to choose from depending on the degree and type of hearing loss your child has. Measurements will be made to ensure that the hearing aid is amplifying sound optimally. Children can customise their hearing aids with stickers and choose from a range of different colours and pictures for their ear moulds. Regular appointments are arranged to monitor your child's progress with the hearing aid and additional professional support is provided to ensure your child gets the most from their hearing aid both at home and at school.

### Bone conduction hearing aids

A bone conduction hearing aid uses a vibrating pad that allows sound to bypass the middle ear and pass through the bone directly to the cochlea. It is worn on a headband with the vibrating pad behind one ear.

Assistive Listening Devices can be used at home or at school to help your child make the most of their hearing. They increase the power of speech relative to background noise which can be particularly useful in a classroom situation.

Radio aids consist of a direct audio input shoe which connects the hearing aid to the receiver. The teacher wears a microphone and a transmitter so that their voice is transmitted straight to the hearing aid.

Sound field systems consist of a microphone for the teacher and a speaker which sits on the child's desk. This type of device is suitable for children with a mild hearing loss or a hearing loss in one ear.

### Referral to other professionals

It may be appropriate for your child to see a speech and language therapist if you have concerns about their development in this area.

If your child is diagnosed with a hearing loss you may like to be referred to the Sensory Consortium Service whose aim is to support, extend and enhance the educational opportunities and achievements of children and young people with sensory impairment.

### Further information

Department of Audiology

Telephone 0118 322 7238

Fax 0118 322 7075

Visit: <http://www.royalberkshire.nhs.uk/wards-and-services/audiology.htm>

The following organisations can be contacted for more information:

The National Deaf Children's Society

Ground Floor South, Castle House, 37-45 Paul Street, London, EC2A 4LS

Information: 020 7490 8656 Fax: 020 7251 5020

E-mail: [ndcs@ndcs.org.uk](mailto:ndcs@ndcs.org.uk) Website: <http://www.ndcs.org.uk>

Helpline: 0808 800 8880

E-mail: [helpline@ndcs.org.uk](mailto:helpline@ndcs.org.uk)

Action on Hearing Loss (previously RNID)

19-23 Featherstone Street, London EC1Y 8SL

Information Line: 0808 808 0123 Textphone: 0808 808 9000 SMS: 0780 0000 360

E-mail: [informationline@hearingloss.org.uk](mailto:informationline@hearingloss.org.uk) Website: <http://www.actiononhearingloss.org.uk>

Down's Syndrome Association

Langdon Down Centre, 2a Langdon Park, Teddington TW11 9PS

Telephone: 0333 1212 300

Email: [info@downs-syndrome.org.uk](mailto:info@downs-syndrome.org.uk) Website: [www.downs-syndrome.org.uk](http://www.downs-syndrome.org.uk)

This document can be made available in other languages and formats upon request.

Dept of Audiology, May 2018

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